LINDA LINGLE
GOVERNOR OF HAWAII

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DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
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In reply, please refer to:
File: EHA/HEER Office
06-083-CAC

February 28, 2006

TO: The Honorable Linda Lingle
Governor of Hawaii

FROM: Chiyome Leinaala Fukino, M.D.
Director of Health

SUBJECT: **Chlordane Contamination at Kaneohe Marine Corps Base**

Metcalf Construction raised issues in the attached point paper that they sent to you. The DOH Hazard Evaluation & Emergency Response (HEER) Office has been aware of this issue and has provided information to both the Navy and to Metcalf, Inc. since chlordane was reported at the Marine Corps Base Hawaii, Kaneohe (MCBH) in July 2005.

In the past, chlordane was heavily used in Hawaii to control termites. Chlordane's persistence in the environment, tendency to accumulate in soil, sediment, and biota, and harmful effects on human health and the environment led to a commercial ban in 1988. Despite the ban, chlordane residues continue to be detected in soil, sediment and fish tissue samples in Hawaii.

1) **In summary**, the HEER Office has been communicating with the Navy and the contractor and does not believe that the Navy's approach for risk assessment and cleanup of chlordane was adequate at the time it was revealed to the HEER Office by Metcalf. Since little if anything has changed (the Navy chose not to include HEER in the review process), the HEER Office continues to question the Navy's evaluation of chlordane risk at MCBH.

2) **Going forward**. The HEER Office will first continue to pursue a meeting with the Navy and their contractors to fully explain the DOH chlordane cleanup policy. Two earlier attempts will be followed up with another request for a meeting with the Navy. Secondly, the HEER Office will plan more specific community outreach activities for distributing the DOH policy to the private contractor community. The HEER Office will provide contractor information and training sessions for chlordane as we have for sampling and interpretation of arsenic contamination in agricultural soils.

Attached is a description of the background of this case.

CHRONOLOGY

1. On or about July 29, 2005, Clarence Callahan of the HEER Office received a call from an employee (Kukui) who was working on the cleanup of chlordane at MCBH. He was employed by an environmental company and asked if six inches of soil cover was sufficient to "take care of chlordane contamination." Mr. Callahan informed him that six inches was not adequate for a chlordane "cap." Mr. Callahan stated that the previous position of the HEER Office did include the use of a six inch cap, but because of new information obtained by the HEER Office, we developed a more defensible sampling and analysis protocol. We have used this sampling protocol in similar circumstances and incorporated it into a more logical assessment and cleanup of chlordane in soil.

2. August 5, 2005: **Metcalf, Inc. Inquiry**. Mr. Callahan received a call from Dave Gerow (Kauai Environmental), an environmental consultant who works as a subcontractor to Metcalf, Inc. inquiring about chlordane contamination at Kaneohe Marine Base Family Housing Project. Mr. Gerow apparently had spoken to someone at DOH who informed him that 18" would be sufficient cover for chlordane contamination. Mr. Gerow asked Mr. Callahan to confirm whether or not 18" of cover was sufficient. Mr. Callahan stated that 18" might be sufficient in certain situations, however, the HEER Office would not suggest that 18" cover was the required "cap" depth. Mr. Gerow informed Mr. Callahan during this conversation that 18" of cover was also not acceptable to the Navy according to Clyde Sugaki, the Navy contact.

Between August and December of 2005, there were several exchanges of messages between the HEER Office, the Navy, and their contractors concerning chlordane concentrations and its distribution at various locations for the MCBH construction site. Navy personnel that contacted Mr. Callahan included Mr. Randall Hu, IR Program Manager – MCBH); Mr. Leighton Wong, Environmental Cleanup Manager, NAVFAC PAC; and Lance A. Lee, P.E. LCDR, CEC, USN.

3. August 22, 2005: **First Navy Contact**. Mr. Callahan returned a call to Jason Mori of the Navy following an email message from Mr. Mori requesting clarification on the DOH cleanup standards for chlordane. The HEER Office approach for chlordane sampling and cleanup procedures were explained and Mr. Callahan agreed to send Mr. Mori a letter with the description of the HEER Office position. The letter was sent to Mr. Mori on August 23, 2005, (HEER Office Correspondence Log # 05-432-05) following a FAX that was sent to him earlier. Roger Brewer and John Peard, HEER Office, reviewed this letter and approach and confirmed that it was consistent with other sites and cleanup instructions (See the Jason Mori letter attached). Based on this updated HEER guidance to the Navy and their military contractors, the HEER Office has received very positive reception from the cleanup contractors.

4. August 29, 2005: **Follow up from other construction contractors**. Mr. Callahan received a call from Walter Chun (Mid-Pac Construction) requesting information about the chlordane cleanup approach and standards that was discussed with the Navy (Jason Mori). A "cut and paste" version from the Mori letter was sent to Mr. Chun describing the DOH approach.

Later that same day, Mr. Gerow, Kauai Environmental, called and requested the same information that was faxed to Mr. Chun.

5. August 22, 2005: **DOH Position**. Mr. Callahan outlined the DOH position in the letter to Jason Mori after discussion with Roger Brewer and John Peard of the HEER Office. This position was considered to be consistent with the HEER Office advisories for other similar sites and situations dealing with chlordane in soil. This description and letter was sent to both the Navy (Jason Mori) and the construction crews on site at MCBH (Walter Chun and Dave Gerow).

> The important aspects of the DOH chlordane policy include 1-applying the appropriate sampling technique; 2-minimizing exposure to humans; and 3-managing the waste on site to keep disposal costs at a minimum while providing human health protection. Mr. Callahan explained to Mr. Mori that the size of the sampling unit (i.e., decision unit) was critical to properly interpreting the contaminant data for risk to humans. The multi-increment (MI) sampling approach would provide the best estimate of the mean chlordane in the decision unit. The Navy was instructed that a screening concentration represents a protective level of exposure that can be used as a starting point to evaluate the need for cleanup of chlordane. The DOH defined for the Navy the process for determining when and under what conditions that any contaminated soil would have to be removed. The Navy was given options for managing the soil for a range of concentrations on the site as a means for keeping disposal costs as low a possible. It was suggested that soil removed from contaminated decision units can be used under roadways, parking lots or buildings on site as this will ensure the contaminated soil is capped to prevent exposure.

The Navy was informed that excessive levels of chlordane would have to be isolated and tracked on site or removed from the site. The above guidance statements are designed to minimize the overall exposure of humans to excessive chlordane concentrations.

6. **Risk Assessment**. After the Navy (Jason Mori) requested a description of the DOH policy for cleanup of chlordane and provided soil chlordane data for DOH review, the Navy eventually informed the HEER Office that the Navy would be performing their own human health risk assessment [telephone conversation with Randall Hu (11/9/05) and Leighton Wong, (11/16/05)]. The Navy's decision was based on their opinion that chlordane was a legally applied pesticide and the DOH did not have any jurisdiction over its cleanup or risk evaluation. Therefore, the Navy would not request DOH to provide a review or comments on the Navy risk assessment. Based on this assertion, the DOH position was stated to Mr. Wong that if the Navy did not accept the DOH participation in the review of the Navy risk assessment, the DOH would not endorse the Navy's cleanup of chlordane.

7. **DOH Position Clarified**. During Mr. Callahan's conversations of 11/9 and 11/16/05, He informed the Navy that while chlordane may have been legally applied at the original housing complex, the demolition of structures, the grading of soil and the subsequent rebuilding of new

housing altered the distribution of chlordane and potentially could present an increased risk to the residents of the new houses.

8. **DOH Advice to Navy and Metcalf**. The HEER Office continued to respond to requests from Metcalf for advice for soil sampling and evaluation of the need for cleanup of chlordane.

Also, during this time, Metcalf and the Navy were exchanging correspondence, some of which was relevant to the questions posed to the HEER Office by Metcalf, Inc. For instance, LCDR Lance Lee of the Navy informed Walter Chun of Metcalf, Inc. that the "Risk Assessment [by the Navy] has been completed." Based on its (i.e., risk assessment) findings, the Navy had developed a "chlordane management strategy." LCDR Lee continues, "This strategy was developed as a joint effort between NAVFAC PAC and MCBH, as well as ***HI DOH***." (Emphasis added).

9. **Navy assertion of DOH participation**. Based on the above assertion, Mr. Callahan reminded LCDR Lee in a 12/06/05 telecon that the DOH was not a participant in the development of the "Navy Strategy." The Navy was reminded that the DOH did not review the Navy Risk Assessment and therefore could not endorse or reject the Navy cleanup of chlordane at MCBH. LCDR Lee is of the understanding that because the HEER Office provided responses to the Navy's information requests and to Metcalf, that the HEER Office was a "participant" in the development of the Navy strategy. HEER maintains that the use of information provided by DOH by the Navy does not constitute **participation** of the DOH in "the development of a strategy." This statement is based on the Navy's decision to refuse DOH's input in the review of the Navy's human health risk assessment.

10. **Other Issues.** There apparently seems to be other contract issues involving Metcalf, Inc. and the Navy aside from this chlordane cleanup work. The DOH is not party to any of these other issues; however, the Navy and Metcalf may be wittingly or unwittingly attempting to use the DOH as leverage to bolster their respective positions in this disagreement. DOH actions have involved the response to requests from both the Navy and Metcalf. And it has consistently provided the same information to both parties. The Navy has chosen to keep the DOH at arms length, yet suggests that DOH is an ally. Metcalf has in every way tried to put the DOH in the middle of the argument without (perhaps) presenting the entire story to DOH.

Attachment: Letter to Mr. Jason Mori, dated August 22, 2005

LINDA LINGLE
GOVERNOR OF HAWAII

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In reply, please refer to:
File: EHA/HEER Office
05-432-CAC

August 22, 2005

Mr. Jason Mori, EV 12
Naval Facilities Engineering Command
Pacific (NAVFAC PAC)
258 Makalapa Drive, Suite 100
Pearl Harbor, Hawaii 96860-3134

Dear Mr. Mori:

This letter is in response to your request this morning for guidance on satisfying the DOH's requirements for cleanup of chlordane. Apparently, your construction activity is similar to other Navy developments in that new construction will take place in the general vicinity of demolished residential units. Unfortunately, these areas have chlordane contamination that exceeds the EPA Region 9 Preliminary Remediation Goals (PRGs) that the DOH uses for screening of potential human health risk.

The DOH has developed the following position concerning the cleanup of chlordane with other developers that have faced chlordane contamination in these situations.

For a maximum 10 housing lot decision unit:

1) Demo buildings and pads (do not scarify site).
2) Multi-increment (MI) sample **each decision unit** at 0-6 inch soil depth. Some developers choose to perform MI sampling only on the **pad areas** because that's where the chlordane is found while others sample the entire **decision unit**. MI sampling on the entire decision unit yields a more representative average value for the decision unit. MI sampling on the pad area would generally yields a "maximum" value found where chlordane is expected to be found.
3) If chlordane is 1.6 mg/kg or less, and heptachlor is 0.11 mg/kg or less, and heptachlor epoxide is 0.053 mg/kg or less – **No Further Action is required.**
4) If concentrations of chlordane, heptachlor, or heptachlor epoxide in any decision unit or pad area exceeds the risk-based action levels noted in Step 3, **then,** identify the former building pad areas within that particular decision unit, and perform MI sampling on them at 0-6 inch depth intervals, and remove any soil i.e., down to 18 inches or to a depth of the highest concentration above the PRG of 1.6 mg/kg chlordane, etc. Verification sampling should demonstrate that soil removal has reduced contamination to below the risk-based action levels noted in Step 3.

Soil removed from contaminated decision units can be used under roadways, parking lots or buildings on site – this will ensure the contaminated soil is capped to prevent exposure. Any contaminated soil capped on site should be clearly noted on detailed maps (extent and depth) and included in a risk management plan prepared for the community. Contaminated soil should not be buried in areas that will be used for utility trenches.

Other (non-housing lot) decision units such as designated playgrounds, open common areas:

A) Other (non-housing lot) decision units should be established to represent shared open space, designated playground areas, and other (non-housing lot) areas/divisions derived from the site plans.

B) **MI sampling of these decision units should be at a 0-6 inch soil depth.** If chlordane is 1.6 mg/kg or less, and heptachlor is 0.11 mg/kg or less, and heptachlor epoxide is 0.053 mg/kg or less – **No Further Action is required.**

C) If concentrations of chlordane, heptachlor, or heptachlor epoxide in any decision unit exceeds the risk-based action levels noted in Step 3, **identify the former building pad areas included within the decision unit, MI sample them at 0-6 inch depth intervals, and proceed as in # 4 above.**

D) Soil removed from contaminated decision units can be used under roadways, parking lots or buildings on site – this will ensure the contaminated soil is capped to prevent exposure. Any contaminated soil capped on site should be clearly noted on detailed maps (extent and depth) and included in a risk management plan prepared for the housing development. **Contaminated soil should not be buried in areas that will be used for utility trenches.**

These guidance statements are within the DOH practices and acceptable risk range for human health, especially considering the levels reported by you for preliminary measurements of chlordane. DOH is especially concerned when levels of chlordane in the range of 16 mg/kg or above are left on site and covered with soil that may not be tracked and result in exposure to humans at a later time period. Excessive levels of chlordane must be isolated and tracked on site or removed from the site. The above guidance statements are designed to minimize the overall exposure of humans to excessive chlordane concentrations.

Please contact me at 586-5815 if you have any questions about these guidance statements.

Sincerely,

Clarence A. Callahan, Ph.D., Acting Supervisor
Site Discovery, Assessment, and Remediation Section